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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,187	05/25/2001	Koichi Shimizu	1081.1120	2194

21171 7590 08/23/2004

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EXAMINER

THANGAVELU, KANDASAMY

ART UNIT PAPER NUMBER

2123

DATE MAILED: 08/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/864,187

Applicant(s)

SHIMIZU, KOICHI

Examiner

Kandasamy Thangavelu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 25 May 2001.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Claims 1-15 of the application have been examined.

Drawings

2. The drawings are objected to; see a copy of Form PTO-948 for an explanation.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 15 is rejected under 35 U.S.C. 101 because the claimed inventions are directed to non-statutory subject matter.

Independent claim 15 recites, "A storage medium for storing programs for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical models". The limitations recited in claim contain computer programs for executing various steps, which are stored in a storage medium. The storage medium and the computer programs are not statutory subject matter. To be statutory, the storage medium should include

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computer executable instructions which when executed in a computer performs a process comprising the steps included in the limitations.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1-15 are rejected under 35 U.S.C. § 102(e) as being anticipated by **Badding et al.** (U.S. Patent 6,526,550).

6.1 **Badding et al.** teaches analyzing characteristics of geometries. Specifically, as per claim 1, **Badding et al.** teaches a multi-physics analysis method for simulating an object model with a plurality of physical models (CL1, L11-17; CL1, L21-31; CL2, L59-62; CL7, L37-47); comprising:

a step for setting the physical models of the element groups constituting the object model (Fig 2A, Item 252; CL1, L21-26);

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a step for searching boundaries of the object model corresponding to the set element group (Fig 2A, Item 256; Fig. 2B, Item 264; CL1, L26-28);

a step for reflecting the physical models of the element group in the boundaries searched on a screen for setting analysis conditions for the boundaries of the object model (CL1, L26-28; CL1, L37-38; CL1, L44-47);

a step for setting the analysis conditions of the boundaries on a screen for setting analysis conditions of the reflected boundaries (CL1, L26-28; CL1, L37-38; CL1, L44-47); and

a step for analyzing the object model with the set physical models and analysis conditions (CL1, L29-31).

Per claim 2: **Badding et al.** teaches that the step for setting the element groups comprises a step for setting the element groups on a screen for setting analysis conditions for the element groups displayed on the same screen as the screen for setting the analysis conditions of the boundaries (CL1, L44-47).

Per claim 3: **Badding et al.** teaches a step for displaying the form of the object model on the same screen as the screen for setting analysis conditions (CL1, L44-47; CL2, L48-52).

Per claim 4: **Badding et al.** teaches that the step for setting the element groups comprises a step for setting the element groups on a screen for setting analysis conditions comprising a two-dimensional list of the element groups and the physical models (CL1, L44-47; CL2, L48-52; Fig 2A, Item 252).

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Per claim 5: **Badding et al.** teaches that the reflecting step comprises a step for reflecting the physical models of the element groups on the screen for setting the analysis conditions of the boundaries comprising a two-dimensional list of the boundaries and the physical models (CL1, L44-47; CL2, L48-52; Fig 2A, Item 252; Fig. 10).

Per claim 6: **Badding et al.** teaches a step for generating a correspondence list showing the correlation between the element groups and boundaries from the element group and boundary data of the object model (Fig 2A, Item 252 and 256; CL1, L44-47; CL2, L48-62).

Per claim 7: **Badding et al.** teaches a step for generating boundary data belonging to two or fewer element groups from the element group and boundary data of the object model (Abstract, L18-20).

6.2 As per claim 8, **Badding et al.** teaches a method for setting analysis conditions for multi-physics analysis for simulating an object model and a plurality of physical models (CL1, L15-17; CL1, L21-31; CL2, L59-62; CL7, L37-47); comprising:

a step for setting the physical models of the element groups constituting the object model (Fig 2A, Item 252; CL1, L21-26);

a step for searching boundaries of the object model corresponding to the set element group (Fig 2A, Item 256; Fig. 2B, Item 264; CL1, L26-28);

a step for reflecting the physical models of the element group in the boundaries found on a screen for setting analysis conditions for the boundaries of the object model (CL1, L26-28; CL1, L37-38; CL1, L44-47); and

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a step for setting the analysis conditions of the boundaries on a screen for setting analysis conditions of the reflected boundaries (CL1, L26-28; CL1, L37-38; CL1, L44-47).

Per claim 9: **Badding et al.** teaches that the step for setting the element groups comprises a step for setting the element groups on a screen for setting analysis conditions for the element groups displayed on the same screen as the screen for setting the analysis conditions of the boundaries (CL1, L44-47).

Per claim 10: **Badding et al.** teaches a step for displaying the form of the object model on the same screen as the screens for setting analysis conditions (CL1, L44-47; CL2, L48-52).

Per claim 11: **Badding et al.** teaches that the step for setting the element groups comprises a step for setting the element groups on a screen for setting analysis conditions comprising a two-dimensional list of the element groups and the physical models (CL1, L44-47; CL2, L48-52; Fig 2A, Item 252).

Per claim 12: **Badding et al.** teaches that the reflecting step comprises a step for reflecting the physical models of the element groups on the screen for setting the analysis conditions of the boundaries comprising a two-dimensional list of the boundaries and the physical models (CL1, L44-47; CL2, L48-52; Fig 2A, Item 252; Fig. 10).

Per claim 13: **Badding et al.** teaches a step for generating a correspondence list showing the correlation between the element groups and boundaries from the element group and boundary data of the object model (Fig 2A, Item 252 and 256; CL1, L44-47; CL2, L48-62).

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Per claim 14: **Badding et al.** teaches a step for generating boundary data belonging to two or fewer element groups from the element group and boundary data of the object model (Abstract, L18-20).

6.3 As per claim 15, **Badding et al.** teaches a storage medium for storing programs for setting analysis conditions for multi-physics analysis for simulating an object model with a plurality of physical models (Fig. 1, Item 108; Fig 2A, Items 252 and 256; CL1, L15-17; CL1, L21-31; CL2, L59-62; CL7, L37-47); wherein the following are stored:

a program for setting the physical models of the element groups constituting the object mode (Fig 2A, Item 252; CL1, L21-26);

a program for finding the boundaries of the object model corresponding to the set element groups (Fig 2A, Item 256; Fig. 2B, Item 264; CL1, L26-28);

a program for reflecting the physical models of the element groups in the boundaries found on a screen for setting analysis conditions for the boundaries of the object model (CL1, L26-28; CL1, L37-38; CL1, L44-47); and

a program for setting the analysis conditions of the boundaries on a screen for setting analysis conditions of the reflected boundaries (CL1, L26-28; CL1, L37-38; CL1, L44-47).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

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The following patents are cited to further show the state of the art with respect to a multi-physics analysis method for simulating an object model with a plurality of physical models:

1. Malthe-Sorensen et al., "Method of modeling of faulting and Fracturing in the earth", U.S. Patent 6,370,491, April 2002.

2. White et al., "System and method for modeling plastic molding and molding parts incorporating the same", U.S. Patent 5,940,309, August 1999.

3. Sebastian et al., "Concurrent engineering design tool and method", U.S. Patent Re. 36,602, March 2000.

4. Ikelle, "Multi-shooting approach to seismic modeling and acquisition", U.S. Patent 6,327,537, December 2001.

5. Keane, "Configurable bio-transport system simulator", U.S. Patent application 2002/0002447, January 2002.

6. Li et al., "Method of knowledge based engineering ... for a climate control system", U.S. Patent 6,477,518, November 2002.

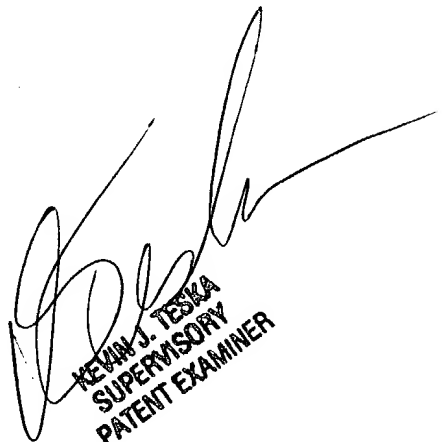
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

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If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
August 19, 2004



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER